

REMARKS/ARGUMENTS

Claims 1-16 remain unchanged. Claim 17 is newly added. Support for claim 17 can be found at, e.g., paragraph 0018 of the present application as published. No new matter is added. Entry of the above amendment is respectfully requested. Upon entry of the above amendment, claims 1-17 are pending in the subject application, with claim 1 being the only independent claim. Reconsideration of the subject application in view of the following remarks is hereby respectfully requested.

Double Patenting

Claims 1-16 are provisionally rejected on the ground of nonstatutory obviousness type-double patenting as being unpatentable over claims 1-19 of the copending Application No. 10/574,026.

Applicants intends to file a Terminal Disclaimer to overcome the double patenting rejection upon receiving an indication that the double patenting rejection is the only remaining ground of rejection.

Anticipation Rejection under 35 U.S.C. 102(e)

Claims 1-3, 8-9, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,717,353 to Mueller et al. (“Mueller”). Reconsideration and withdrawal of this rejection are respectfully requested.

As stated in MPEP Section 2131, “To anticipate a claim, the reference must teach every element of the claim.” Independent claim 1 recites a green-emitting LED which comprises, among other things, a layer of a phosphor. The phosphor belongs to a class of oxynitridosilicates, having a cation M and an empirical formula $M_{(1-c)}Si_2O_2N_2:D_c$, where D denotes a doping with divalent europium and where M comprises Sr as a constituent and M = Sr alone or $M = Sr_{(1-x-y)}Ba_yCa_x$ with $0 \leq x+y < 0.5$ is used.

The Examiner points to col. 2, lines 16-23 of Mueller as disclosing the phosphor of present claim 1. For reasons expressed below, it is respectfully submitted that Mueller fails to disclose anywhere, including col. 2, lines 16-23, the phosphor recited in claim 1 of the present application.

At col. 2, lines 16-23, Mueller discloses a luminescent material having the formula $(Sr_{1-a-b}Ca_bBa_c)Si_x N_y O_z Eu_{a}$ ($a=0.002-0.2$, $b=0.0-0.25$, $c=0.0-0.25$, $x=1.5-2.5$, $y=1.5-2.5$, $z=1.5-2.5$). This formula is apparently different from the formula of the phosphor of claim 1 of the present application. For example, 1) Mueller fails to disclose that a value of 2 is selected for each of x, y, and z (i.e., the relative amount of Si, O, and N) in its formula to anticipate the amount of Si, O, and N recited in claim 1 of the present application for the phosphor; and 2) Mueller does not disclose that the total relative amount of the Eu and Sr (or Sr, Ba, and Ca) must be 1 to anticipate the amount of M and Eu as recited in claim 1 of the present application for the phosphor. Therefore, Mueller fails to disclose at col. 2, lines 16-23 the phosphor as defined in claim 1 of the present application. Furthermore, Applicants do not find that any other passages in Mueller disclose the phosphor as defined in claim 1 of the present application.

In the paragraph spanning pages 4-5 of the Office Action, the Examiner states that “[t]he claimed molar proportion of Si, O, and N all fall within the ranges of the prior art. Therefore the claimed green phosphor formula is clearly anticipated.” This statement is not supported by the

relevant law. The Examiner is respectfully referred to MPEP Section 2131.03 citing *Atofina v. Great Lakes Chem. Corp*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500⁰C did not describe the claimed range of 330-450⁰C with sufficient specificity to be anticipatory. Based on the Examiner's reasoning, the so-called "selection invention" over a broad range of values known in the prior art would not exist, and yet it does!

For reasons expressed above, Mueller fails to disclose each and every element of claim 1 of the present application. Therefore, claim 1 of the present application is not anticipated by Mueller under 35 U.S.C. 102(e). For at least the same reasons, claim 3, 9-11, 13 and 15, each of which depends from claim 1, are also not anticipated by Mueller under 35 U.S.C. 102(e). Withdrawal of the anticipation rejection is, therefore, respectfully requested.

The Examiner has not issued any obviousness rejection of claim 1 in view of Mueller applied alone under 35 U.S.C. 103(a). With the elimination of the rejection of claim 1 as anticipated by Mueller under 35 U.S.C. 102(e), applicants realize that perhaps by using hindsight and based on the disclosure of the present invention, one may pick, select, and combine from the numerous possibilities disclosed in Mueller to obtain the phosphor of claim 1 of the present application. Nevertheless, nowhere does Mueller *per se* provide any reason for a person of ordinary skill in the art to do so. Merely relying on a hindsight reasoning to establish obviousness of a claim is not permissible under U.S. patent law. Therefore, independent claim 1 and the claims dependent therefrom are also not obvious over Mueller under 35 U.S.C. 103(a).

Obviouness Rejections under 35 U.S.C. 103(a)

Claims 4-7, 10, and 13-15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Mueller in view of US Patent Appl. Pub. No. 2003/0094893 to Ellens et al. (“Ellens”).

Ellens is cited to demonstrate that certain additional features recited in dependent claims are known in the prior art. However, Ellens cannot remedy the deficiencies discussed above in connection with claim 1. Therefore, a combination of the primary reference Mueller with Ellens would not lead to the invention recited in any claim that depends from independent claim 1, such as claims 4-7, 10, and 13-15. Withdrawal of the obviousness rejection of claims 4-7, 10, and 13-15 over Mueller in view of Ellens is, therefore, respectfully requested.

Claim 11 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Mueller.

Claim 11 depends from claim 1 and recites that the LED is dimmable. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made “that LED can be dimmable by reducing the current input, as in accordance to needs.” As discussed above in connection with claim 1, Mueller does not disclose all the limitations of claim 1. Claim 11 depends from claim 1 and, therefore, incorporates all the limitations of claim 1. Therefore, even assuming *arugendo* that the Examiner’s statement concerning the additional feature in dependent claim 11 is correct, claim 11 is still not obvious over Mueller for at least the same reasons discussed above in connection with claim 1.

New claim 17, depending from claim 1, recites that the phosphor comprises less than 100 ppm tungsten impurity and less than 100 ppm cobalt impurity. The reasons discussed above in connection with claim 1, from which claim 17 depends, are equally applicable to claim 17. Moreover, the additional features recited in claim 17 serve to further distinguish the invention over the prior art of record. Specifically, the prior art of record does not disclose a phosphor

comprising less than 100 ppm tungsten impurity and less than 100 ppm cobalt impurity. It is the inventors of the present application that discovered the criticality of a low level of impurity of tungsten and cobalt. *See* paragraph 0018 of the present application as published.

Based on the foregoing, it is believed that the present application is in condition for allowance. Early and favorable consideration is respectfully requested.

Any fees or charges required at this time in connection with the present application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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